

Highlights

Vol. 1 No. 15

Dec. 29, 1958

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Washington SCIENCE TRENDS

SPACE AGENCY RESEARCH: The National Aeronautics and Space Administration (NASA) now plans to sponsor a "greatly increased program" of research in educational and research institutions. NASA Official Ira H. Abbott reports that this program will be in addition to contemplated contracts with private industry for the design, development and construction of space vehicles and components.

The Space Agency spokesman explains: "We intend to conduct an intensive program of scientific research in space, both to assist in the development of space technology and to explore and study the natural phenomena occurring outside the earth.

This program will offer unique opportunities for cooperative activity between NASA and the educational and research institutions in conducting scientific experiments using sounding rockets, satellites, deep space probes and interplanetary vehicles..."

Program will be headed by Dr. Lloyd Wood of the NASA Washington Headquarters staff. Preliminary planning has established the following general principles for projects: (1) The research may be either basic or applied; (2) The research should be relevant to the mission of the NASA; (3) The research should be coordinated with and supplementary to NASA Research Center programs; (4) The research should be coordinated with that sponsored by the National Science Foundation and other Government agencies. (5) Continuity of support should be provided so the investigators can plan their research most effectively and make the commitments necessary to retain capable assistants.

THREE - YEAR FUNDING: Abbott told the American Association for the Advancement of Science that it is planned to make the initial obligation of funds to cover costs for periods up to three years. Notice of termination or extension of support will be given at least one year in advance, whenever practicable. Overhead will be paid according to approved government practices with the intent of paying the indirect cost of research activities. It is also planned to use both contracts and grants as appropriate to support the research.

Many branches of science will be included. In addition to the usual physical and engineering sciences, NASA will be interested in the cosmological sciences, the life sciences, and, at least to some degree, socio-economic studies.

"Within the limit of our resources", the NASA official explains, "we shall be happy to contract with (educational and research) institutions to follow up on their ideas and to reduce them to properly instrumented experiments." In some cases, such as sounding rockets, the engineering and operating problems may be entirely within the capabilities of the institution. In other cases NASA may provide engineering and operating facilities.

DEPARTMENT OF SCIENCE? President Eisenhower's action in approving the establishment of a new Federal Council for Science and Technology is viewed here as an attempt to head off growing demands for a Department of Science in the Government. Such a plan is generally opposed by officials of the maze of agencies and offices concerned with Federal science and engineering activities. Despite many overlapping and duplicating activities the move toward central control has been zealously opposed.

President Eisenhower's science advisor, Dr. James R. Killian, Jr. organized the panel which proposed the new Federal Council. His group met in secret, its membership was not disclosed in advance, and findings were released to the press with no opportunity for questions or discussions.

Congress is sure to take a careful look at the entire problem of science in the Federal Government during 1959. At least two new senators, Kenneth B. Keating (R) N.Y. and Jennings Randolph (D) W. Va. have already called for the establishment of a Cabinet-Level Science Department. Many more Senators and Representatives share their views.

Killian Committee Recommendations:

- * Establishment of the Federal Council for Science and Technology. The Council will have the responsibility of advising Dr. Killian, who will also serve as Chairman.
- * Improved administration and management of research in Government laboratories. The report recommends that each department or agency with scattered scientific and technical interests should designate a representative "to provide unity and understanding at the policy level" and to serve on the Federal Council.
- * Critical examination of Government-sponsored research in non-Government institutions. The Report says the Government "has a serious responsibility not to divert these institutions from their own functions and missions which are vital to American life and culture." More flexibility in grants and longer contract commitments are suggested.
- * Planning to meet the capital needs of science. The report comments that a lack of instruments and facilities is beginning to handicap the national scientific effort in both Government and private laboratories.
- * Private support of research. The report points out that the huge Federal science program may discourage private and corporation support of "audacious research" that might not be suitable for Government support.

MORE MONEY NEEDED: The report says that "serious underinvestment" is already handicapping programs in such fields as meteorology and climatology, inorganic chemistry, high-temperature research, oceanography, radio astronomy, continental geography and many of the newer aspects of life sciences such as microbiology, genetics, the study of growth, and the neurological foundations of behavior.

DISORDER: The report is surprisingly frank on the disorganization of many Federal programs. It states: "Nowhere in Government is the total research and development budget adequately reviewed as a whole, distinct from the program of an individual agency...."

ARMY RESEARCH AND DEVELOPMENT PROGRAMS may be overhauled under the terms of a new regulation designed to reduce the "lead time" between the conception of an idea and the production of military hardware. Under the plan, production engineering will begin early in the development cycle, standard parts will be used in R&D equipment and the testing period will be reduced -- allegedly without detracting from weapon and equipment reliability.

Army Research Chief Gen. Arthur G. Trudeau says "no step is sacrosanct or immune to improvement." He says the new regulation, (AR705-5) will set forth (a) The establishment and subsequent review of military characteristics; (b) assignment and subsequent review of priorities; (c) Testing sequence and the overlapping or combined conduct of tests or other steps in the development cycle; (d) communications, including visits, among Army agencies and between Army agencies and contractors on R&D matters.

SMALL BUSINESS received a "negligible" 3.2 percent of all research and development contract dollars awarded by the Defense Department during the first ten months of Fiscal Year 1958. That is the picture reported this week by the Senate Small Business Committee. Witnesses assured the Committee that efforts are being made to clear more small business for the classified information vital to the obtaining of most R&D contracts. Pentagon also hopes to see more small firms benefit from a provision of the Armed Services Procurement Regulations which requires that every firm must submit essential manufacturing data gathered in fulfillment of an R&D contract. The section of the regulations is designed to open the developed item to competition.

COMMITTEE RECOMMENDATIONS: Here's a summary of the Senate Committee's recommendations, released today (Dec. 29) and of interest to R&D Firms:

* Quick action by Small Business Administration to assist small firms in obtaining R&D contracts, including expedited advance and progress payments.

* New procedures which would permit replenishment parts procurements made at the source, rather than through the original prime contractors. If the item can be reproduced by more than one company it should be opened to competitive bids.

* In development contracts for defense items, the Government should generally obtain all rights to the item necessary for subsequent manufacture by others and for all design and production information gathered by the contractor in fulfillment of the contract. Such information should be furnished to the Government prior to the service test contract, to the extent that it is available.

FEDERAL AVIATION AGENCY has launched two new and comprehensive R&D Studies designed to provide a look-ahead for the Jet Age:

* Performance Characteristics of existing and future air vehicles will be studied under a \$102,000 contract to Fairchild Engine and Airplane Corp. Applied Science Division, Alexandria, Va. Data will be used to establish design values for a common system of air traffic control, a system matched to the capabilities and performance of jets, seaplanes, turboprops, helicopters, lighter than air vehicles, light aircraft and vertical and short take-off planes.

* Weather System Performance will be studied under a \$97,905 contract to Technical Operations, Inc. Burlington, Mass. Agency seeks answers to fundamental questions about the time lag factor in weather data.

THE CHECKLIST

- () Nuclear Power Program; the comments of reactor designers and industrial representatives to questions submitted by the Joint Committee on Atomic Energy. 218 pages. Free (Write Joint Committee on Atomic Energy F-88, The Capitol, Washington 25, D.C.)
- () Atomic Research and Development: details of a joint R&D program to be sponsored by the U.S. Atomic Energy Commission and the European Atomic Energy Community. The overall industrial objective is the installation of U.S. type power reactors having a total electrical generating capacity of approximately 1,000,000 kilowatts. (Details from EURATOM-U.S. Joint Research and Development Board, 51 Rue Belliard, Brussels, Belgium or Director, Division of International Affairs, U.S. AEC, Washington, 25, D.C.)
- () Military Prime Contracts and Subcontracts; a Senate committee report on military procurement policies, particularly as they affect small business. Includes information on Research and Development contracting. 28 pages; Free. (Write Committee on Small Business, Senate Office Building, Washington 25, D.C. for SSB No. 327)
- () Science Manuscripts; a Library of Congress plan to establish an inventory of important manuscript collections, including those relating to science. Millions of individual manuscripts will be listed. (Details from Information Office, Library of Congress, Washington, 25, D.C.)
- () Astronomical Almanac; a booklet issued annually by the U.S. Bureau of Land Management for the use of its cadastral engineers. It is the only publication of its kind designed for surveyors rather than astronomers. (The "Ephemeris" is available for 30 cents and the "Manual of Instructions" for \$2.75 from the Superintendent of Documents, Government Printing Office, Washington 25, D.C.)
- () Aircraft Equipment; an illustrated catalog of new and old Aero Medical Laboratory items of special interest to aircrews. Includes information on clothing, oxygen equipment, survival kits, life rafts and preservers, parachutes and food systems. 59 pages; \$2. (Write OTS, U.S. Department of Commerce, Washington 25, D.C. for PB-151225)
- () Automatic Data Reduction, an illustrated catalog of commercially available or developmental items of equipment pertaining to automatic data reduction systems. The majority of devices described are digital in nature. The catalog was prepared as a guide for consideration of equipment. 191 pages; \$5. (Write OTS, U.S. Department of Commerce, Washington 25, D.C. for PB-111928-R)
- () Space Research and the International Geophysical Year; a Congressional staff report issued today which calls for a partnership of Government, business, educational institutions, foundations and the public to advance the cause of science. 36 pages. Free (Write Committee on Space and Astronautics, House Office Building, Washington 25, D.C.)

